Extended Abstract

Promoting Active Aging and Quality of Life through Technological Devices †

Laura Nieto-Riveiro 1,2,3,*, **Thais Pousada-García** 1,2,3 **and María del Carmen Miranda-Duro** 2,3,4

1 Health Sciences Department, Universidade da Coruña, 15071 A Coruña, Spain; thais.pousada.garcia@udc.es

2 Research group Artificial Neural Networks and Adaptative, Systems-Center of Medical Informatics and Radiological Diagnosis, (RNASA-IMEDIR), Research Center on Information and Communication, Technologies (CITIC), Faculty of Health Sciences, Universidade da, Coruña, 15071 A Coruña, Spain; carmen.miranda@udc.es

3 Institute for Biomedical Research (INIBIC), Universidade da Coruña, 15071 A Coruña, Spain

4 Biomedical Sciences, Medicine and Physiotherapy Department, Universidade da Coruña, 15071 A Coruña, Spain

* Correspondence: laura.nieto@udc.es; Tel.: +34-981-167-000

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Abstract: This abstract presents a set of projects developed by RNASA-IMEDIR research group of the Universidade da Coruña, aimed at promoting active aging, quality of life, health and personal autonomy of older people, by means of technological devices.

Keywords: active aging; healthy aging; information and communication technologies; older people; quality of life

1. Introduction

Active aging (AA) is defined, according to the World Health Organization [1] (p. 12), as 'the process of optimizing opportunities for health, participation, and security in order to enhance the quality of life as people age'. At the International Conference on Active Aging, held in Seville in 2010, a fourth component was included: lifelong learning.

In recent decades, several initiatives have been developed, aimed at promoting AA, some of them through technological tools, such as the 'Living with vitality' program [2,3]. In this regard, the literature shows that information technology and communications (ICT) can provide numerous benefits to the elderly, associated with different components of AA: stimulation or maintenance of cognitive abilities; opportunities for communication and socialization; participation in leisure activities; online use of administrative or financial services; purchases at a distance, or access to community resources such as health or social services [4–6].

This abstract presents a set of projects developed by RNASA-IMEDIR research group of the Universidade da Coruña, aimed at promoting AA, quality of life, health and personal autonomy of older people, by means of technological devices.

2. In-TIC Project

This work focuses on digital literacy and therapeutic stimulation of the older population through technological tools, using In-TIC PC software as support [7,8].

In-TIC PC is a software created by RNASA-IMEDIR group, with the support of Orange Foundation. It's available for free download on the page www.intic.udc.es. It allows to simplify and personalize the use of the computer and the Internet, by configuring virtual keyboards adapted to

the physical, cognitive, sensory and social needs of each person. In this way, a set of virtual keyboards, specifically adapted to the needs and capacities of the 10 elderly participants in the project, was prepared to facilitate their access to ICT and their digital literacy process.

In addition, a teaching methodology, based on the learning interests and rhythms of the older people, was elaborated, that includes activities and contents related to the application of ICT in their daily life, leisure and social participation.

3. EA-TIC Project

EA-TIC is a project based on the use of an interactive digital whiteboard (IDW) as a means of intervention [9]. Through this technological support, two programs of different activities were implemented with 45 older participants, divided into groups of 3–10 persons.

- Security and Healthy Living Program, aimed at reinforcing the safety of the older people in their occupational performance, both in their homes and in other habitual environments, and promoting the acquisition of healthy living habits.
- Leisure and Social Participation Program, aimed at favoring their social participation and their participation in meaningful leisure activities.

The results obtained in this project showed that the participants had positive impressions on the IDW, highlighting different advantages provided by this tool: accessibility of content, related to the wide projection surface; speed and dynamism in the presentation of content; immediacy in finding information; possibility to capture on the board the contributions of the group's members; stimulation of the capacity of attention and concentration; or support in structuring and understanding information.

4. CloudPatient Project

CloudPatient is a project focused on the use of a platform in the cloud that allows interoperability between biomedical sensors, mobile devices and cloud services for intelligent attention to the older people (www.cloudpatient.udc.es). This platform facilitates the monitoring of their treatments and health status, and offers digital contents and activities, aimed at promoting a healthy and safe lifestyle.

The main services offered by the CloudPatient platform are:

- Semi-automatic registry, through biosensors and wearables, of different parameters related to the health status of the person.
- Monitoring of certain factors related to health status and well-being, such as physical activity, sleep quality, weight or blood pressure.
- Generation of personalized multimedia contents and activities, focused on promoting a healthy and safe lifestyle and improving their quality of life.
- Access to updated, unified, accessible, and reliable information in real time.

The pilot tests of this project were carried out with 10 elderly people. For several months, they used the CloudPatient platform and biosensors, as a wearable to record physical activity and sleep quality.

5. Scratch-EA Project

The general objective of Scratch-EA project is to encourage creativity development, to improve quality of life and to promote AA, through the use of Scratch, a computer programming tool.

The intervention developed in this project lasted 8 months and it focused on teaching the participants (6 elderly people) to design and program digital activities and materials, such as interactive stories, games or animations, through Scratch language.

6. Conclusions

Most of the participants in these works highlighted the numerous benefits and contributions of ICT in their daily lives, such as greater opportunities for leisure and communication, improvements in mood and social participation, stimulation of their abilities, mainly cognitive, improvements in their security and personal autonomy, or the possibility of making new learnings.

So, the results obtained in these projects show that technology can contribute to the improvement of quality of life of the elderly population, and to the strengthening of the four pillars of the AA concept: health, participation, safety and lifelong learning. However, it is necessary to develop further experiences and similar studies, in order to deepen the effects and opportunities offered by ICT to older people.

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